

Patent Application US/07/978,891

SEQUENCE LISTING *See pp. 1, 4 → 16*1 (1) GENERAL INFORMATION
2
3
4
56 (i) APPLICANT: Darrell Anderson, Nabil Hanna, John Leonard, Roland Newman and Mitchell R
7
8 (ii) TITLE OF INVENTION: THERAPEUTIC APPLICATION OF CHIMERIC ANTIBODY TO HUMAN B LYMPHOCY
9
10 (iii) NUMBER OF SEQUENCES: 8
11
12 (iv) CORRESPONDING ADDRESS:
13
14 (A) ADDRESSEE: IDEC Pharmaceuticals Corporation
15 (B) STREET: 11099 N. Torrey Pines Road, #160
16 (C) CITY: La Jolla
17 (D) STATE: California
18 (E) COUNTRY: USA
19 (F) ZIP: 92037
20
21 (v) COMPUTER READABLE FORM:
22
23 (A) MEDIUM TYPE: Diskette, 3.5 inch, 1.44 Mb
24 (B) COMPUTER: Macintosh
25 (C) OPERATING SYSTEM: MS.DOS
26 (D) SOFTWARE: Microsoft Word 5.0
27 *✓ Insert ending parenthesis*
28 (vi) CURRENT APPLICATION DATA:
29
30 (A) APPLICATION NUMBER:
31 (B) FILING DATE:
32 (C) CLASSIFICATION:
33
34 (viii) ATTORNEY/AGENT INFORMATION:
35
36 (A) NAME: Burgoon, Richard P. Jr.
37 (B) REGISTRATION NUMBER: 34,787
38 (C) REFERENCE/DOCKET NUMBER:
39
40 (ix) TELECOMMUNICATION INFORMATION:
41
42 (A) TELEPHONE: (619) 458-0600
43 (B) TELEFAX: (619) 546-9274
44
45
46 (2) INFORMATION FOR SEQ. ID. NO.: 1:
47
48 (i) SEQUENCE CHARACTERISTICS:
49
50 (A) LENGTH: 8540 bases
51 (B) TYPE: nucleic acid
52 (C) STRANDEDNESS: single*for Delete periods -
for Edit this error
throughout the
remaining seq.
listings*

PAGE: 1

SEQUENCE CORRECTION REPORT
PATENT APPLICATION US/07/978,891

DATE: 12/16/92
TIME: 09:46:26
S4267

LINE ORIGINAL TEXT

4 (1)GENERAL INFORMATION
12 (iv)CORRESPONDING ADDRESS:
46 (2)INFORMATION FOR SEQ. ID. NO.: 1:
61 (ix)SEQUENCE DESCRIPTION: SEQ. ID. NO.:
351 (3)INFORMATION FOR SEQ. ID. NO.: 2:
366 (ix)SEQUENCE DESCRIPTION: SEQ. ID. NO.:
677 (4)INFORMATION FOR SEQ. ID. NO.: 3:
692 (ix)SEQUENCE DESCRIPTION: SEQ. ID. NO.:
698 (5)INFORMATION FOR SEQ. ID. NO.: 4:
713 (ix)SEQUENCE DESCRIPTION: SEQ. ID. NO.:
719 (6)INFORMATION FOR SEQ. ID. NO.: 5:
734 (ix)SEQUENCE DESCRIPTION: SEQ. ID. NO.:
754 (7)INFORMATION FOR SEQ. ID. NO.: 6:
769 (ix)SEQUENCE DESCRIPTION: SEQ. ID. NO.:
777 (8)INFORMATION FOR SEQ. ID. NO.: 7:
792 (ix)SEQUENCE DESCRIPTION: SEQ. ID. NO.:
797 (9)INFORMATION FOR SEQ. ID. NO.: 8:
812 (ix)SEQUENCE DESCRIPTION: SEQ. ID. NO.:

CORRECTED TEXT

(1) GENERAL INFORMATION:
(iv) CORRESPONDENCE ADDRESS:
(2) INFORMATION FOR SEQ ID NO: 1:
(ix) SEQUENCE DESCRIPTION: SEQ ID. NO:
(2) INFORMATION FOR SEQ ID NO: 2:
(ix) SEQUENCE DESCRIPTION: SEQ ID. NO:
(2) INFORMATION FOR SEQ ID NO: 3:
(ix) SEQUENCE DESCRIPTION: SEQ ID. NO:
(2) INFORMATION FOR SEQ ID NO: 4:
(ix) SEQUENCE DESCRIPTION: SEQ ID. NO:
(2) INFORMATION FOR SEQ ID NO: 5:
(ix) SEQUENCE DESCRIPTION: SEQ ID. NO:
(2) INFORMATION FOR SEQ ID NO: 6:
(ix) SEQUENCE DESCRIPTION: SEQ ID. NO:
(2) INFORMATION FOR SEQ ID NO: 7:
(ix) SEQUENCE DESCRIPTION: SEQ ID. NO:
(2) INFORMATION FOR SEQ ID NO: 8:
(ix) SEQUENCE DESCRIPTION: SEQ ID. NO:

PAGE: 1

SEQUENCE MISSING ITEM REPORT
PATENT APPLICATION US/07/978,891

DATE: 12/16/92
TIME: 09:46:26
S4267

MANDATORY IDENTIFIER THAT WAS NOT FOUND

CURRENT APPLICATION DATA
APPLICATION NUMBER
FILING DATE
CLASSIFICATION
PRIOR APPLICATION DATA
APPLICATION NUMBER
FILING DATE

PAGE: 1

SEQUENCE VERIFICATION REPORT
PATENT APPLICATION US/07/978,891

DATE: 12/16/92
TIME: 09:46:26
S4267

LINE ERROR

28 Response Exceeds Line Limitations
30 Unknown or Misplaced Identifier
31 Unknown or Misplaced Identifier
32 Unknown or Misplaced Identifier
695 Wrong Nucleic Acid Designator
692 Entered and Calc. Seq. Length differ
716 Wrong Nucleic Acid Designator
734 Entered and Calc. Seq. Length differ
772 Wrong Nucleic Acid Designator
794 Wrong Nucleic Acid Designator
792 Entered and Calc. Seq. Length differ
812 Entered and Calc. Seq. Length differ

ORIGINAL TEXT

(v) CURRENT APPLICATION DATA:

(A) APPLICATION NUMBER:

(B) FILING DATE:

(C) CLASSIFICATION:

TC 3' 2

(ix) SEQUENCE DESCRIPTION: SEQ. ID. NO.:

5' TGC AGC ATC CGT ACG TTT GAT TTC CAG C

(ix) SEQUENCE DESCRIPTION: SEQ. ID. NO.:

5' GCG GCT CCC ACG CGT GTC CTG TCC CAG 3

5' GG(G/C) TGT TGT GCT AGC TG(A/C) (A/G)

(ix) SEQUENCE DESCRIPTION: SEQ. ID. NO.:

(ix) SEQUENCE DESCRIPTION: SEQ. ID. NO.:

Patent Application US/07/978,891

53 (D)TOPOLOGY: circular
54
55 (ii)MOLECULE TYPE: DNA (genomic)
56
57 (iii)HYPOTHETICAL: yes
58
59 (iv)ANTI-SENSE: no
60
61 (ix)SEQUENCE DESCRIPTION: SEQ. ID. NO.: 1:
62
63 GACGTCGCGG CCGCTCTAGG CCTCCAAAAA AGCCTCCTCA CTACTTCTGG AATAGCTCAG 60
64
65 AGGCCGAGGC GGCCCTCGGCC TCTGCATAAA TAAAAAAAAT TAGTCAGCCA TGCATGGGC 120
66
67 GGAGAATGGG CGGAACCTGGG CGGAGTTAGG GGCGGGATGG GCAGGAGTTAG GGGCGGGACT 180
68
69 ATGGTTGCTG ACTAATTGAG ATGCATGCTT TGCACTACTTC TGCCTGCTGG GGAGCCTGGG 240
70
71 GACTTTCCAC ACCTGGTTGC TGACTAATTG AGATGCATGC TTTGCATACT TCTGCCTGCT 300
72
73 GGGGAGCCTG GGGACTTTCC ACACCCTAAC TGACACACAT TCCACAGAAAT TAATTCCCCT 360
74
75 AGTTATTAAT AGTAATCAAT TACGGGGTCA TTAGTTCATAT GCCCATATAT GGAGTTCCGC 420
76
77 GTTACATAAC TTACGGTAAA TGGCCCGCCT GGCTGACCGC CCAACGACCC CCGCCCATTG 480
78
79 ACGTCAATAA TGACGTATGT TCCCATAGTA ACGCCAATAG GGACTTCCA TTGACGTCAA 540
80
81 TGGGTGGACT ATTTACGGTA AACTGCCAC TTGGCAGTAC ATCAAGTGTAA TCATATGCCA 600
82
83 AGTACGCCCT CTATTGACGT CAATGACGGT AAATGGCCCG CCTGGCATTAA TGCCCAAGTAC 660
84
85 ATGACCTTAT GGGACTTTCC TACTTGGCAG TACATCTACG TATTAGTCAT CGCTATTACC 720
86
87 ATGGTGATGC GGTTTGGCA GTACATCAAT GGGCGTGGAT AGCGGTTGA CTCACGGGA 780
88
89 TTTCCAAGTC TCCACCCAT TGACGTCAAT GGGAGTTGT TTTGGCACCA AAATCAACGG 840
90
91 GACTTTCCAA AATGTCGTAA CAACTCCGCC CCATTGACGC AAATGGCGG TAGGCAGTGTAA 900
92
93 CGGTGGGAGG TCTATATAAG CAGAGCTGGG TACGTGAACC GTCAGATCGC CTGGAGACGC 960
94
95 CATCACAGAT CTCTCACCAT GAGGGTCCCC GCTCAGCTCC TGGGGCTCCT GCTGCTCTGG 1020
96
97 CTCCCAGGTG CACGATGTGA TGGTACCAAG GTGGAAATCA AACGTACGGT GGCTGCACCA 1080
98
99 TCTGTCTTCA TCTTCCCGCC ATCTGATGAG CAGTTGAAAT CTGGAACTGC CTCTGTTGTG 1140
100
101 TGCCTGCTGA ATAACCTCTA TCCCAGAGAG GCCAAAGTAC AGTGGAAAGGT GGATAACGCC 1200
102
103 CTCCAATCGG GTAACCTCCA GGAGAGTGTC ACAGAGCAGG ACAGCAAGGA CAGCACCTAC 1260
104

Patent Application US/07/978,891

105	AGCCTCAGCA GCACCCGTGAC GCTGAGCAAA GCAGACTACG AGAACACAA AGTCTACGCC	1320
106	TGCGAAGTCA CCCATCAGGG CCTGAGCTCG CCCGTACAA AGAGCTTCAA CAGGGGAGAG	1380
108	TGTTGAATTC AGATCCGTTA ACGGTTACCA ACTACCTAGA CTGGATTCTG GACAACATGC	1440
110	GGCCGTGATA TCTACGTATG ATCAGCCTCG ACTGTGCCTT CTAGTTGCCA GCCATCTGTT	1500
112	TTTTGCCCT CCCCCGTGCC TTCCCTGACC CTGGAAGGTG CCACTCCCAC TGCCCTTTCC	1560
114	TAATAAAATG AGGAAATTGC ATCGCATTGT CTGAGTAGGT GTCATTCTAT TCTGGGGGGT	1620
116	GGGGTGGGGC AGGACAGCAA GGGGGAGGAT TGGGAAGACA ATAGCAGGCA TGCTGGGGAT	1680
118	GCGGTGGGCT CTATGGAACC AGCTGGGCT CGACAGCTAT GCCAAGTACG CCCCCCTATTG	1740
120	ACGTCAATGA CGGTAATGG CCCGCCTGGC ATTATGCCA GTACATGACC TTATGGGACT	1800
122	TTCCTACTTG GCAGTACATC TACGTATTAG TCATCGCTAT TACCATGGTG ATGCGGTTT	1860
124	GGCAGTACAT CAATGGCGT GGATAGCGGT TTGACTCACG GGGATTCCA AGTCTCCACC	1920
126	CCATTGACGT CAATGGGAGT TTGTTTGGC ACCAAAATCA ACAGGGACTTT CCAAAATGTC	1980
128	GTAACAACTC CGCCCCATTG ACGAAATGG GCGGTAGGCG TGTACGGTGG GAGGTCTATA	2040
130	TAAGCAGAGC TGGGTACGTC CTCACATTCA GTGATCAGCA CTGAACACAG ACCCGTCGAC	2100
132	ATGGGTTGGA GCCTCATCTT GCTCTTCCTT GTCGCTGTTG CTACCGTGT CGCTAGCACC	2160
134	AAGGGCCCCT CGGTCTTCCC CCTGGCACCC TCCTCCAAGA GCACCTCTGG GGGCACAGCG	2220
136	GCCCTGGGCT GCCTGGTCAA GGACTACTTC CCCGAACCGG TGACGGTGTG TGGAACCTCA	2280
138	GGCGCCCTGA CCAGCGGCCT GCACACCTTC CCGGCTGTCC TACAGTCCTC AGGACTCTAC	2340
140	TCCCTCAGCA GCGTGGTGAC CGTGCCTCC AGCAGCTTGG GCACCCAGAC CTACATCTGC	2400
142	AACGTGAATC ACAAGCCCAG CAACACCAAG GTGGACAAGA AAGCAGAGCC CAAATCTTGT	2460
144	GACAAAACCTC ACACATGCC ACCGTGCCCA GCACCTGAAC TCCTGGGGGG ACCGTCAGTC	2520
146	TTCCTCTTCC CCCCAAAACC CAAGGACACC CTCATGATCT CCCGGACCCCC TGAGGTACCA	2580
148	TGCGTGGTGG TGGACGTGAG CCACGAAGAC CCTGAGGTCA AGTTCAACTG GTACGTGGAC	2640
150	GGCGTGGAGG TGCATAATGC CAAGACAAAG CCGCGGGAGG AGCAGTACAA CAGCACGTAC	2700
152	CGTGTGGTCA GCGTCCTCAC CGTCCTGCAC CAGGACTGGC TGAATGGCAA GGAGTACAAG	2760
154	TGCAAGGTCT CCAACAAAGC CCTCCAGCC CCCATCGAGA AAACCATCTC CAAAGCCAAA	2820
156		

Patent Application US/07/978,891

157	GGGCAGCCCC GAGAACACCA GGTGTACACC CTGCCCCAT CCCGGGATGA GCTGACCAAG	2880
158	AACCAGGTCA GCCTGACCTG CCTGGTCAAA GGCTTCTATC CCAGCGACAT CGCCGTGGAG	2940
159	TGGGAGAGCA ATGGGCAGCC GGAGAACAAAC TACAAGACCA CGCCTCCCGT GCTGGACTCC	3000
160	GACGGCTCCT TCTTCCTCTA CAGCAAGCTC ACCGTGGACA AGAGCAGGTG GCAGCAGGGG	3060
161	AACGTCTTCT CATGCTCCGT GATGCATGAG GCTCTGCACA ACCACTACAC GCAGAACAGGC	3120
162	CTCTCCCTGT CTCCGGTAA ATGAGGATCC GTTAACGGTT ACCAACTACC TAGACTGGAT	3180
163	TCGTGACAAC ATGCGGCCGT GATATCTACG TATGATCAGC CTCGACTGTG CCTTCTAGTT	3240
164	GCCAGCCATC TGTTGTTGC CCCTCCCCCG TGCCCTCCTT GACCCTGGAA GGTGCCACTC	3300
165	CACTGTCTT TTCTTAATAA AATGAGGAAA TTGCATCGCA TTGTCTGAGT AGGTGTCATT	3360
166	CTATTCTGGG GGGTGGGGTG GGGCAGGACA GCAAGGGGA GGATTGGAA GACAATAGCA	3420
167	GGCATGCTGG GGATGCGGTG GGCTCTATGG AACCAAGCTGG GGCTCGACAG CGCTGGATCT	3480
168	CCCGATCCCC AGCTTGCTT CTCAATTCT TATTCGATA ATGAGAAAAA AAGGAAAATT	3540
169	AATTTAACCA CCAATTCAAGT AGTTGATTGA GCAAATGCGT TGCCAAAAG GATGCTTTAG	3600
170	AGACAGTGTG CTCTGCACAG ATAAGGACAA ACATTATTCA GAGGGAGTAC CCAGAGCTGA	3660
171	GACTCCTAAG CCAGTGAGTG GCACAGCATT CTAGGGAGAA ATATGCTTGT CATCACCGAA	3720
172	GCCTGATTCC GTAGAGCCAC ACCTTGGTAA GGGCCAATCT GCTCACACAG GATAGAGAGG	3780
173	GCAGGAGCCA GGGCAGAGCA TATAAGGTGA GGTAGGATCA GTTGCTCCTC ACATTTGCTT	3840
174	CTGACATAGT TGTGTTGGGA GCTTGGATAG CTTGGACAGC TCAGGGCTGC GATTCGCGC	3900
175	CAAACTTGAC GGCAATCCTA GCGTGAAGGC TGGTAGGATT TTATCCCCGC TGCCATCATG	3960
176	GTTCGACCCT TGAACACTGCAT CGTCGCCGTG TCCCAAAATA TGGGGATTGG CAAGAACGGA	4020
177	GACCTACCCCT GCCCTCCGCT CAGGAACGAG TTCAAGTACT TCCAAAGAAT GACCACAACC	4080
178	TCTTCAGTGG AAGGTAAACA GAATCTGGTG ATTATGGTA GGAAAACCTG GTTCTCCATT	4140
179	CCTGAGAAGA ATCGACCTTT AAAGGACAGA ATTAATATAG TTCTCAGTAG AGAACTCAA	4200
180	GAACCACCAAC GAGGAGCTCA TTTTCTTGCC AAAAGTTGG ATGATGCCCTT AAGACTTATT	4260
181	GAACAAACCGG AATTGGCAAG TAAAGTAGAC ATGGTTGGA TAGTCGGAGG CAGTTCTGTT	4320
182	TACCAAGGAAG CCATGAATCA ACCAGGCCAC CTTAGACTCT TTGTGACAAG GATCATGCAG	4380
183		
184		
185		
186		
187		
188		
189		
190		
191		
192		
193		
194		
195		
196		
197		
198		
199		
200		
201		
202		
203		
204		
205		
206		
207		
208		

Patent Application US/07/978,891

209 GAATTTGAAA GTGACACGTT TTTCCCAGAA ATTGATTTGG GGAAATATAA ACTTCTCCCA 4440
210
211 GAATACCCAG GCGTCCTCTC TGAGGTCCAG GAGGAAAAAG GCATCAAGTA TAAGTTGAA 4500
212
213 GTCTACGAGA AGAAAGACTA ACAGGAAGAT GCTTCAAGT TCTCTGCTCC CCTCCTAAAG 4560
214
215 CTATGCATTT TTATAAGACC ATGGGACTTT TGCTGGCTT AGATCAGCCT CGACTGTGCC 4620
216
217 TTCTAGTTGC CAGCCATCTG TTGTTTGCCTT CTCCCCCGTG CCTTCCTTGA CCCTGGAAGG 4680
218
219 TGCCACTCCC ACTGTCCTTT CCTAATAAAA TGAGGAAATT GCATCGCATT GTCTGAGTAG 4740
220
221 GTGTCATTCT ATTCTGGGG GTGGGGTGGG GCAGGACAGC AAGGGGGAGG ATTGGGAAGA 4800
222
223 CAATAGCAGG CATGCTGGGG ATGCGGTGGG CTCTATGGAA CCAGCTGGGG CTCGAGCTAC 4860
224
225 TAGCTTGCT TCTCAATTTC TTATTTGCAT AATGAGAAAA AAAGGAAAAT TAATTTAAC 4920
226
227 ACCAATTCAAG TAGTTGATTG AGCAAATGCG TTGCCAAAAA GGATGCTTA GAGACAGTGT 4980
228
229 TCTCTGCACA GATAAGGACA AACATTATTC AGAGGGAGTA CCCAGAGCTG AGACTCCTAA 5040
230
231 GCCAGTGAGT GGCACAGCAT TCTAGGGAGA AATATGCTTG TCATCACCGA AGCCTGATT 5100
232
233 CGTAGAGCCA CACCTTGGTA AGGGCCAATC TGCTCACACA GGATAGAGAG GGCAGGAGCC 5160
234
235 AGGGCAGAGC ATATAAGGTG AGGTAGGATC AGTTGCTCCT CACATTGCT TCTGACATAG 5220
236
237 TTGTGTTGGG AGCTTGGATC GATCCTCTAT GGTTGAACAA GATGGATTGC ACGCAGGTT 5280
238
239 TCCGGCCGCT TGGGTGGAGA GGCTATTGG CTATGACTGG GCACAACAGA CAATGGCTG 5340
240
241 CTCTGATGCC GCCGTGTTCC GGCTGTCAGC GCAGGGCGC CCGGTTCTT TTGTCAAGAC 5400
242
243 CGACCTGTCC GGTGCCCTGA ATGAACTGCA GGACGAGGCA GCGCGGCTAT CGTGGCTGGC 5460
244
245 CACGACGGGC GTTCCTTGC CAGCTGTGCT CGACGTTGTC ACTGAAGCGG GAAGGGACTG 5520
246
247 GCTGCTATTG GGCGAAGTGC CGGGGCAGGA TCTCCTGTCA TCTCACCTTG CTCCTGCCGA 5580
248
249 GAAAGTATCC ATCATGGCTG ATGCAATGCG GCGGCTGCAT ACGCTTGATC CGGCTACCTG 5640
250
251 CCCATTGAC CACCAAGCGA AACATCGCAT CGAGCGAGCA CGTACTCGGA TGGAAGCCGG 5700
252
253 TCTTGTGAT CAGGATGATC TGGACGAAGA GCATCAGGGG CTCGCGCCAG CCGAACTGTT 5760
254
255 CGCCAGGCTC AAGGGCGCGA TGCCCCACGG CGAGGATCTC GTCGTGACCC ATGGCGATGC 5820
256
257 CTGCTTGCCG AATATCATGG TGGAAAATGG CCGCTTTCT GGATTCACTG ACTGTGGCCG 5880
258
259 GCTGGGTGTG GCGGACCGCT ATCAGGACAT AGCGTTGGCT ACCCGTGATA TTGCTGAAGA 5940
260

Patent Application US/07/978,891

261 GCTTGGCGGC GAATGGGCTG ACCGCTTCCT CGTGCTTAC GGTATCGCCG CTCCCGATT 6000
262 GCAGCGCATC GCCTTCTATC GCCTTCTTGA CGAGTTCTTC TGAGCGGGAC TCTGGGGTT 6060
263 GAAATGACCG ACCAAGCGAC GCCCAACCTG CCATCACGAG ATTCGATTC CACCGCCGCC 6120
264 TTCTATGAAA GGTTGGGCTT CGGAATCGTT TTCCGGGACG CCGGCTGGAT GATCCTCCAG 6180
265 CGCGGGGATC TCATGCTGGA GTTCTTCGCC CACCCCAACT TGTTTATTGC AGCTTATAAT 6240
266 270 GGTACAAAT AAAGCAATAG CATCACAAAT TTCACAAATA AAGCATTTC TTCACTGCAT 6300
271 TCTAGTTGTG GTTTGTCCAA ACTCATCAAT CTATCTTATC ATGTCTGGAT CGCGGCCGCC 6360
272 ATCCCCTCGA GAGCTTGGCG TAATCATGGT CATACTGTT TCCTGTGTGA AATTGTTATC 6420
273 CGCTCACAAAT TCCACACAAAC ATACGAGCCG GAAGCATAAA GTGTAAAGCC TGGGGTGCCT 6480
274 AATGAGTGAG CTAACTCACA TTAATTGCGT TCGCCTCACT GCCCGCTTTC CAGTCGGGAA 6540
275 ACCTGTCGTG CCAGCTGCAT TAATGAATCG GCCAACGCGC GGGGAGAGGC GGTTTGCFTA 6600
276 TTGGGCGCTC TTCCGCTTCC TCGCTCACTG ACTCGCTGCG CTCGGTCGTT CGGCTGCGGC 6660
277 GAGCGGTATC AGCTCACTCA AAGGCGTAA TACGGTTATC CACAGAATCA GGGGATAACG 6720
278 CAGGAAAGAA CATGTGAGCA AAAGGCCAGC AAAAGGCCAG GAACCGTAAA AAGGCCGCGT 6780
279 TGCTGGCGTT TTTCCATAGG CTCCGCCCTT CTGACGAGCA TCACAAAAAT CGACGCTCAA 6840
280 GTCAGAGGTG GCGAAACCCG ACAGGACTAT AAAGATACCA GGCGTTCCC CCTGGAAGCT 6900
281 CCCTCGTGCCT CTCTCCTGTT CCGACCCTGC CGCTTACCGG ATACCTGTCC GCCTTCTCC 6960
282 CTTCGGGAAAG CGTGGCGCTT TCTCAATGCT CACGCTGTAG GTATCTCAGT TCGGTGTAGG 7020
283 TCGTTCGCTC CAAGCTGGGC TGTGTGCACG AACCCCCCGT TCAGCCGAC CGCTGCGCCT 7080
284 TATCCGGTAA CTATCGTCTT GAGTCCAACC CGGTAAGACA CGACTTATCG CCACTGGCAG 7140
285 CAGCCACTGG TAACAGGATT AGCAGAGCGA GGTATGTAGG CGGTGCTACA GAGTTCTTGA 7200
286 AGTGGTGGCC TAACTACGGC TACACTAGAA GGACAGTATT TGGTATCTGC GCTCTGCTGA 7260
287 AGCCAGTTAC CTTCGGAAAA AGAGTTGGTA GCTCTTGATC CGGCAAACAA ACCACCGCTG 7320
288 GTAGCGGTGG TTTTTTGTT TGCAAGCAGC AGATTACGCG CAGAAAAAAA GGATCTCAAG 7380
289 AAGATCCTTT GATCTTTCT ACGGGGTCTG ACGCTCAGTG GAACGAAAAC TCACGTTAAG 7440
290 GGATTTGGT CATGAGATTA TCAAAAAGGA TCTTCACCTA GATCCTTTA ATTAAAAAT 7500
291 312

Patent Application US/07/978,891

313 GAAGTTTAA ATCAATCTAA AGTATATATG AGTAAACTTG GTCTGACAGT TACCAATGCT 7560
314 TAATCAGTGA GGCACCTATC TCAGCGATCT GTCTATTCG TTCATCCATA GTTGCCTGAC 7620
315 TCCCCGTCGT GTAGATAACT ACGATACGGG AGGGCTTACC ATCTGCCCC AGTGCTGCAA 7680
316 TGATACCGCG AGACCCACGC TCACCGGCTC CAGATTATC AGCAATAAAC CAGCCAGCCG 7740
317 GAAGGGCCGA GCGCAGAAGT GGTCCTGCAA CTTTATCCGC CTCCATCCAG TCTATTAATT 7800
318 GTTGCCGGGA AGCTAGAGTA AGTAGTCGC CAGTTAATAG TTTGCGCAAC GTTGTGCCA 7860
319 TTGCTACAGG CATCGTGGTG TCACGCTCGT CGTTTGGTAT GGCTTCATTC AGCTCCGGTT 7920
320 CCCAACGATC AAGGCGAGTT ACATGATCCC CCATGTTGTC CAAAAAAAGCG GTTAGCTCCT 7980
321 TCGGTCTCC GATCGTTGTC AGAAGTAAGT TGGCCGCAGT GTTATCACTC ATGGTTATGG 8040
322 CAGCACTGCA TAATTCTCTT ACTGTCATGC CATCCGTAAG ATGCTTTCT GTGACTGGTG 8100
323 AGTACTCAAC CAAGTCATTC TGAGAATAGT GTATGCGGCG ACCGAGTTGC TCTTGCCGG 8160
324 CGTCAATACG GGATAATACC GCGCCACATA GCAGAACTTT AAAAGTGCTC ATCATTGGAA 8220
325 AACGTTCTTC GGGGCGAAAA CTCTCAAGGA TCTTACCGCT GTTGAGATCC AGTCGATGT 8280
326 AACCCACTCG TGCACCCAAC TGATCTTCAG CATCTTTAC TTTCACCAAGC GTTTCTGGGT 8340
327 GAGCAAAAAC AGGAAGGCAA AATGCCGCAA AAAAGGGAAT AAGGGCGACA CGGAAATGTT 8400
328 GAATACTCAT ACTCTTCCTT TTTCAATATT ATTGAAGCAT TTATCAGGGT TATTGTCTCA 8460
329 TGAGCGGATA CATATTTGAA TGTATTTAGA AAAATAAACCA AATAGGGTT CCGCGCACAT 8520
330 TTCCCCGAAA AGTGCCACCT 8540
331
332
333
334
335
336
337
338
339
340
341
342
343
344
345
346
347
348
349
350

351 (3) INFORMATION FOR SEQ. ID. NO.: 2:

352 (i) SEQUENCE CHARACTERISTICS:

353 (A) LENGTH: 9209 bases
354 (B) TYPE: nucleic acid
355 (C) STRANDEDNESS: single
356 (D) TOPOLOGY: circular

357 (ii) MOLECULE TYPE: DNA (genomic)

358 (iii) HYPOTHETICAL: yes

359 (iv) ANTI-SENSE: no

Patent Application US/07/978,891

365
366 (ix) SEQUENCE DESCRIPTION: SEQ. ID. NO.: 2:
367
368
369 GACGTCGCGG CCGCTCTAGG CCTCCAAAAA AGCCTCCTCA CTACTTCTGG AATAGCTCAG 60
370 AGGCCGAGGC GGCCCTCGGCC TCTGCATAAA TAAAAAAAAT TAGTCAGCCA TGCATGGGGC 120
371 GGAGAATGGG CGGAACCTGGG CGGAGTTAGG GGCGGGATGG GCGGAGTTAG GGGCGGGACT 180
372 ATGGTTGCTG ACTAATTGAG ATGCATGCTT TGCATACTTC TGCCTGCTGG GGAGCCTGGG 240
373 GACTTTCCAC ACCTGGTTGC TGACTAATTG AGATGCATGC TTTGCATACT TCTGCCTGCT 300
374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 GGGGAGCCTG GGGACTTTCC ACACCCTAAC TGACACACAT TCCACAGAAT TAATTCCCCT 360 AGTTATTAAAT AGTAATCAAT TACGGGTCA TTAGTTCATA GCCCATATAT GGAGTTCCGC 420 GTTACATAAC TTACGGTAAA TGGCCCGCCT GGCTGACCGC CCAACGACCC CCGCCCATTG 480 ACGTCAATAA TGACGTATGT TCCCATAGTA ACGCCAATAG GGACTTTCCA TTGACGTCAA 540 TGGGTGGACT ATTTACGGTA AACTGCCAC TTGGCAGTAC ATCAAGTGTA TCATATGCCA 600 AGTACGCCCT CTATTGACGT CAATGACGGT AAATGGCCCG CCTGGCATTAA TGCCCAAGTAC 660 ATGACCTTAT GGGACTTTCC TACTTGGCAG TACATCTACG TATTAGTCAT CGCTATTACC 720 ATGGTGATGC GGTTTTGGCA GTACATCAAT GGGCGTGGAT AGCGGTTTGA CTCACGGGA 780 TTTCCAAGTC TCCACCCCCAT TGACGTCAAT GGGAGTTTGT TTTGGCACCA AAATCAACGG 840 GACTTTCCAA AATGTCGTAACAACTCCGCC CCATTGACGC AAATGGCGG TAGGGGTGTA 900 CGGTGGGAGG TCTATATAAG CAGAGCTGGG TACGTGAACC GTCAGATCGC CTGGAGACGC 960 CATCACAGAT CTCTCACTAT GGATTTCAAG GTGCAGATTAA TCAGCTTCCT GCTAATCAGT 1020 GCTTCAGTCA TAATGTCCAG AGGACAAATT GTTCTCTCCC AGTCTCCAGC AATCCTGTCT 1080 GCATCTCCAG GGGAGAAGGT CACAATGACT TGCAAGGCCA GCTCAAGTGT AAGTTACATC 1140 CACTGGTTCC AGCAGAAGCC AGGATCCTCC CCCAAACCCCT GGATTTATGC CACATCCAAC 1200 CTGGCTTCTG GAGTCCCTGT TCGCTTCAGT GGCAGTGGGT CTGGGACTTC TTACTCTCTC 1260 ACAATCAGCA GAGTGGAGGC TGAAGATGCT GCCACTTATT ACTGCCAGCA GTGGACTAGT 1320 AACCCACCCA CGTTCGGAGG GGGGACCAAG CTGGAAATCA AACGTACGGT GGCTGCACCA 1380 TCTGTCTTCA TCTTCCCCGCC ATCTGATGAG CAGTTGAAAT CTGGAACCTGC CTCTGTTGTG 1440

Patent Application US/07/978,891

417 TGCCTGCTGA ATAACCTCTA TCCCCAGAGAG GCCAAAGTAC AGTGGAAAGGT GGATAACGCC 1500
418 CTCCAATCGG GTAACCTCCA GGAGAGTGTC ACAGAGCAGG ACAGCAAGGA CAGCACCTAC 1560
419 AGCCTCAGCA GCACCCCTGAC GCTGAGCAAA GCAGACTACG AGAAACACAA AGTCTACGCC 1620
420 TGCGAAGTCA CCCATCAGGG CCTGAGCTCG CCCGTACCAA AGAGCTTCAA CAGGGGAGAG 1680
421 TGTTGAATTG AGATCCGTTA ACGGTTACCA ACTACCTAGA CTGGATTCTG GACAACATGC 1740
422 GGCCGTGATA TCTACGTATG ATCAGCCTCG ACTGTGCCCTT CTAGTTGCCA GCCATCTGTT 1800
423 GTTTGCCCTT CCCCCGTGCC TTCCTTGACC CTGGAAAGGTG CCACTCCCAC TGTCCTTTCC 1860
424 TAATAAAATG AGGAAATTGC ATCGCATTGT CTGAGTAGGT GTCATTCTAT TCTGGGGGGT 1920
425 GGGGTGGGGC AGGACAGCAA GGGGGAGGAT TGGGAAGACA ATAGCAGGCA TGCTGGGGAT 1980
426 GCGGTGGGCT CTATGGAACC AGCTGGGCT CGACAGCTAT GCCAAGTACG CCCCCTATTG 2040
427 ACGTCAATGA CGGTAAATGG CCCGCCTGGC ATTATGCCA GTACATGACC TTATGGACT 2100
428 TTCCTACTTG GCAGTACATC TACGTATTAG TCATCGCTAT TACCATGGTG ATGCGGTTTT 2160
429 GGCAGTACAT CAATGGCGT GGATAGCGGT TTGACTCACG GGGATTCCA AGTCTCCACC 2220
430 CCATTGACGT CAATGGGAGT TTGTTTGCG ACCAAAATCA ACGGGACTTT CCAAAATGTC 2280
431 GTAACAACTC CGCCCCATTG ACGCAAATGG GCGGTAGGCG TGTACGGTGG GAGGTCTATA 2340
432 TAAGCAGAGC TGGGTACGTC CTCACATTCA GTGATCAGCA CTGAACACAG ACCCGTCGAC 2400
433 ATGGGTTGGA GCCTCATCTT GCTCTTCCTT GTCGCTGTTG CTACCGTGT CCTGTCCCAG 2460
434 GTACAACATGC AGCAGCCTGG GGCTGAGCTG GTGAAGCCTG GGGCCTCAGT GAAGATGTCC 2520
435 TGCAAGGCTT CTGGCTACAC ATTTACCAGT TACAATATGC ACTGGTAAA ACAGACACCT 2580
436 GGTGGGGGCC TGGAAATGGAT TGGAGCTATT TATCCCGGAA ATGGTGATAC TTCCTACAAT 2640
437 CAGAAGTTCA AAGGCAAGGC CACATTGACT GCAGACAAAT CCTCCAGCAC AGCCTACATG 2700
438 CAGCTCAGCA GCCTGACATC TGAGGACTCT GCGGTCTATT ACTGTGCAAG ATCGACTTAC 2760
439 TACGGCGGTG ACTGGTACTT CAATGTCTGG GGCGCAGGGA CCACGGTCAC CGTCTCTGCA 2820
440 GCTAGCACCA AGGGCCCATC GGTCTTCCCC CTGGCACCCCT CCTCCAAGAG CACCTCTGGG 2880
441 GGCACAGCGG CCCTGGGCTG CCTGGTCAAG GACTACTTCC CCGAACCGGT GACGGTGTG 2940
442 TGGAACTCAG CGGCCCTGAC CAGCGGCGTG CACACCTTCC CGGCTGTCCT ACAGTCCTCA 3000
443

Patent Application US/07/978,891

469 GGACTCTACT CCCTCAGCAG CGTGGTGACC GTGCCCTCCA GCAGCTTGGG CACCCAGACC 3060
470 TACATCTGCA ACGTGAATCA CAAGCCCAGC AACACCAAGG TGGACAAGAA AGCAGAGCCC 3120
471 AAATCTTGTG ACAAAACTCA CACATGCCCA CCGTGCCCCAG CACCTGAACCT CCTGGGGGGGA 3180
472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 GAGGTACAT GCGTGGTGGT GGACGTGAGC CACGAAGACC CTGAGGTCAA GTTCAACTGG 3300
TACGTGGACG GCGTGGAGGT GCATAATGCC AAGACAAAGC CGCGGGAGGA GCAGTACAAC 3360
AGCACCGTACC GTGTGGTCAG CGTCCTCACC GTCCCTGCACC AGGACTGGCT GAATGGCAAG 3420
GAGTACAAGT GCAAGGTCTC CAACAAAGCC CTCCCAGCCC CCATCGAGAA AACCATCTCC 3480
AAAGCCAAG GGCAGCCCCG AGAACACACAG GTGTACACCC TGCCCCCATC CCGGGATGAG 3540
CTGACCAAGA ACCAGGTCAAG CCTGACCTGC CTGGTCAAAG GCTTCTATCC CAGCGACATC 3600
GCCGTGGAGT GGGAGAGCAA TGGGCAGCCG GAGAACAACT ACAAGACAC GCCTCCCGTG 3660
CTGGACTCCG ACGGCTCCTT CTTCCCTCTAC AGCAAGCTCA CCGTGGACAA GAGCAGGTGG 3720
CAGCAGGGGA ACGTCTTCTC ATGCTCCGTG ATGCATGAGG CTCTGCACAA CCACTACACG 3780
CAGAAGAGCC TCTCCCTGTC TCCGGTAAA TGAGGATCCG TTAACGGTTA CCAACTACCT 3840
AGACTGGATT CGTGACAACA TGCGGCCGTG ATATCTACGT ATGATCAGCC TCGACTGTGC 3900
CTTCTAGTTG CCAGCCATCT GTTGTGTTGCC CCTCCCCCGT GCCTCCCTTG ACCCTGGAAG 3960
GTGCCACTCC CACTGTCCCTT TCCTAATAAA ATGAGGAAAT TGCATCGCAT TGTCTGAGTA 4020
GGTGTCAATTC TATTCTGGGG GGTGGGGTGG GCCAGGACAG CAAGGGGGAG GATTGGGAAG 4080
ACAATAGCAG GCATGCTGGG GATGCGGTGG GCTCTATGGA ACCAGCTGGG GCTCGACAGC 4140
GCTGGATCTC CCGATCCCCA GCTTGCCTTC TCAATTCTT ATTTGCATAA TGAGAAAAAA 4200
AGGAAAATTA ATTTAACAC CAATTCACTA GTTGATTGAG CAAATGCGTT GCCAAAAAGG 4260
ATGCTTTAGA GACAGTGTTC TCTGCACAGA TAAGGACAAA CATTATTCAG AGGGAGTACC 4320
CAGAGCTGAG ACTCCTAACGC CAGTGAGTGG CACAGCATTG TAGGGAGAAA TATGCTTGTG 4380
ATCACCGAAG CCTGATTCCG TAGAGCCACA CCTTGGTAAG GGCCAATCTG CTCACACAGG 4440
ATAGAGAGGG CAGGAGCCAG GCCAGAGCAT ATAAGGTGAG GTAGGATCAG TTGCTCCTCA 4500
CATTTGCTTC TGACATAGTT GTGTTGGAG CTTGGATAGC TTGGACAGCT CAGGGCTGCG 4560

Patent Application US/07/978,891

521 ATTCGCGCC AAACTTGACG GCAATCCTAG CGTGAAGGCT GGTAGGATT TATCCCCGCT 4620
522 GCCATCATGG TTCGACCATT GAACTGCATC GTGCCGTGT CCCAAAATAT GGGGATTGGC 4680
523 AAGAACGGAG ACCTACCCCTG GCCTCCGCTC AGGAACGAGT TCAAGTACTT CCAAAGAATG 4740
524 ACCACAAACCT CTTCAAGTGGA AGGTAAACAG AATCTGGTGA TTATGGGTAG GAAAACCTGG 4800
525 TTCTCCATTC CTGAGAAGAA TCGACCTTTA AAGGACAGAA TTAATATAGT TCTCAGTAGA 4860
526 GAACTCAAAG AACCAACCACG AGGAGCTCAT TTTCTTGCCA AAAGTTGGA TGATGCCTTA 4920
527 AGACTTATTG AACAAACCGGA ATTGGCAAGT AAAGTAGACA TGTTTGGAT AGTCGGAGGC 4980
528 ATCATGCAGG AATTGAAAG TGACACGTTT TTCCCAGAAA TTGATTGGG GAAATATAAA 5100
529 CTTCTCCAG AATAACCCAGG CGTCCTCTCT GAGGTCCAGG AGGAAAAGG CATCAAGTAT 5160
530 AAGTTTGAAG TCTACGAGAA GAAAGACTAA CAGGAAGATG CTTTCAAGTT CTCTGCTCCC 5220
531 CTCCTAAAGC TATGCATTT TATAAGACCA TGGGACTTTT GCTGGCTTA GATCAGCCTC 5280
532 GACTGTGCCT TCTAGTTGCC AGCCATCTGT TGTTGCCCC TCCCCCGTGC CTTCCGGAC 5340
533 CCTGGAAGGT GCCACTCCCA CTGTCCTTTC CTAATAAAAT GAGGAAATTG CATCGCATTG 5400
534 TCTGAGTAGG TGTCAATTCTA TTCTGGGGG TGGGGTGGGG CAGGACAGCA AGGGGGAGGA 5460
535 TTGGGAAGAC AATAGCAGGC ATGCTGGGA TGCGGTGGGC TCTATGGAAC CAGCTGGGC 5520
536 TCGAGCTACT AGCTTGCTT CTCAATTCT TATTGCTATA ATGAGAAAAA AAGGAAAATT 5580
537 AATTTAACCA CCAATTCAAGT AGTTGATTGA GCAAATGCGT TGCCAAAAG GATGCTTTAG 5640
538 AGACAGTGTGTT CTCTGCACAG ATAAGGACAA ACATTATTCA GAGGGAGTAC CCAGAGCTGA 5700
539 GACTCCTAAG CCAGTGAGTG GCACAGCATT CTAGGGAGAA ATATGCTTGT CATCACCGAA 5760
540 GCCTGATTCC GTAGAGCCAC ACCTTGGTAA GGGCCAATCT GCTCACACAG GATAGAGAGG 5820
541 GCAGGAGCCA GGGCAGAGCA TATAAGGTGA GGTAGGATCA GTTGCTCCTC ACATTTGCTT 5880
542 CTGACATAGT TGTGTTGGGA GCTTGGATCG ATCCTCTATG GTTGAACAAG ATGGATTGCA 5940
543 CGCAGGTTCT CCGGCCGCTT GGGTGGAGAG GCTATTGCGC TATGACTGGG CACAACAGAC 6000
544 AATCGGCTGC TCTGATGCCG CCGTGTCCG GCTGTCAGCG CAGGGCGCC CGGTTCTTT 6060
545 TGTCAAGACC GACCTGTCCG GTGCCCTGAA TGAACGTGAG GACGAGGCAG CGCGGCTATC 6120
546
547
548
549
550
551
552
553
554
555
556
557
558
559
560
561
562
563
564
565
566
567
568
569
570
571
572

Patent Application US/07/978,891

573	GTGGCTGGCC ACGACGGCGC TTCCCTGCGC AGCTGTGCTC GACGTTGTCA CTGAAGCGGG	6180
574	AAGGGACTGG CTGCTATTGG GCGAAGTGCC GGGGCAGGAT CTCCTGTCAT CTCACCTTGC	6240
575	TCCTGCCGAG AAAGTATCCA TCATGGCTGA TGCAATGCGG CGGCTGCATA CGCTTGATCC	6300
576	GGCTACCTGC CCATTCGACC ACCAAGCGAA ACATCGCATC GAGCGAGCAC GTACTCGGAT	6360
577	GGAAGCCGGT CTTGTCGATC AGGATGATCT GGACGAAGAG CATCAGGGGC TCGCGCCAGC	6420
578	CGAACTGTTG GCCAGGCTCA AGGCGCGCAT GCCCCGACGGC GAGGATCTCG TCGTGACCCA	6480
579	TGGCGATGCC TGCTTGCCGA ATATCATGGT GGAAAATGGC CGCTTTCTG GATTCATCGA	6540
580	CTGTGGCCGG CTGGGTGTGG CGGACCGCTA TCAGGACATA GCGTTGGCTA CCCGTGATAT	6600
581	TGCTGAAGAG CTTGGCGGGCG AATGGGCTGA CCGCTTCCTC GTGCTTTACG GTATCGCCGC	6660
582	TCCCGATTTC CAGCGCATCG CCTTCTATCG CCTTCTTGAC GAGTTCTTCT GAGCGGGACT	6720
583	CTGGGGTTCG AAATGACCGA CCAAGCGACG CCCAACCTGC CATCACGAGA TTTCGATTCC	6780
584	ACCGCCGCCT TCTATGAAAG GTTGGGCTTC GGAATCGTT TCCGGGACGC CGGCTGGATG	6840
585	ATCCTCCAGC GCAGGGATCT CATGCTGGAG TTCTTCGCC ACCCCAACCTT GTTTATTGCA	6900
586	GCTTATAATG GTTACAAATA AAGCAATAGC ATCACAAATT TCACAAATAA AGCATTTC	6960
587	TCACTGCATT CTAGTTGTGG TTTGTCCAAA CTCATCAATC TATCTTATCA TGTCTGGATC	7020
588	GCGGCCGCGA TCCCCTCGAG AGCTTGGCGT AATCATGGTC ATAGCTGTT CCTGTGTGAA	7080
589	ATTGTTATCC GCTCACAAATT CCACACAAACA TACGAGCCGG AAGCATAAAG TGTAAAGCCT	7140
590	GGGGTGCCTA ATGAGTGAGC TAACTCACAT TAATTGCGTT GCGCTCACTG CCCGCTTTCC	7200
591	AGTCGGGAAA CCTGTCGTGC CAGCTGCATT AATGAATCGG CCAACGGCGG GGGAGAGGCG	7260
592	GTTTGCAT TGGCGCTCT TCCGCTTCCT CGCTCACTGA CTCGCTGCGC TCGGTGTTTC	7320
593	GGCTGCGGCG AGCGGTATCA GCTCACTCAA AGGGGTAAT ACGGTTATCC ACAGAACAG	7380
594	GGGATAACGC AGGAAAGAAC ATGTGAGCAA AAGGCCAGCA AAAGGCCAGG AACCGTAAAA	7440
595	AGGCCGCGTT GCTGGCGTT TTCCATAGGC TCCGCCCGCC TGACGAGCAT CACAAAATC	7500
596	GACGCTCAAG TCAGAGGTGG CGAAACCCGA CAGGACTATA AAGATACCAAG GCGTTCCCG	7560
597	CTGGAAGCTC CCTCGTGCCTC TCTCCTGTT CGACCCCTGCC GCTTACCGGA TACCTGTCCG	7620
598	CCTTTCTCCC TTCGGGAAGC GTGGCGCTTT CTCAATGCTC ACGCTGTAGG TATCTCAGTT	7680
599		
600		
601		
602		
603		
604		
605		
606		
607		
608		
609		
610		
611		
612		
613		
614		
615		
616		
617		
618		
619		
620		
621		
622		
623		
624		

Patent Application US/07/978,891

625 CGGTGTAGGT CGTCGCTCC AAGCTGGCT GTGTGCACGA ACCCCCCGTT CAGCCCGACC 7740
626 GCTGCGCCTT ATCCGGTAAC TATCGTCTTG AGTCCAACCC GGTAAGACAC GACTTATCGC 7800
627 CACTGGCAGC AGCCACTGGT AACAGGATTA GCAGAGCGAG GTATGTAGGC GGTGCTACAG 7860
628
629
630
631 AGTTCTTGAA GTGGTGGCCT AACTACGGCT ACACTAGAAG GACAGTATTT GGTATCTGCG 7920
632
633 CTCTGCTGAA GCCAGTTACC TTCGGAAAAA GAGTTGGTAG CTCTTGATCC GGCAAACAAA 7980
634
635 CCACCGCTGG TAGCGGTGGT TTTTTGTTT GCAAGCAGCA GATTACGCGC AGAAAAAAAG 8040
636
637 GATCTCAAGA AGATCCTTTG ATCTTTCTA CGGGGTCTGA CGCTCAGTGG AACGAAAACT 8100
638
639 CACGTTAAGG GATTTGGTC ATGAGATTAT CAAAAAGGAT CTTCACCTAG ATCCTTTAA 8160
640
641 ATTAAAAATG AAGTTTAAA TCAATCTAAA GTATATATGA GTAAACTTGG TCTGACAGTT 8220
642
643 ACCAATGCTT AATCAGTGAG GCACCTATCT CAGCGATCTG TCTATTCTGT TCATCCATAG 8280
644
645 TTGCCTGACT CCCCGTCGTG TAGATAACTA CGATACGGGA GGGCTTACCA TCTGGCCCCA 8340
646
647 GTGCTGCAAT GATACCGCGA GACCCACGCT CACCGGCTCC AGATTTATCA GCAATAAAACC 8400
648
649 AGCCAGCCGG AAGGGCCGAG CGCAGAAGTG GTCCTGCAAC TTTATCCGCC TCCATCCAGT 8460
650
651 CTATTAATTG TTGCCGGAA GCTAGAGTAA GTAGTTCGCC AGTTAATAGT TTGCGCAACG 8520
652
653 TTGTTGCCAT TGCTACAGGC ATCGTGGTGT CACGCTCGTC GTTTGGTATG GCTTCATTCA 8580
654
655 GCTCCGGTTC CCAACGATCA AGGCGAGTTA CATGATCCCC CATGTTGTGC AAAAAAGCGG 8640
656
657 TTAGCTCCTT CGGTCTCCG ATCGTTGTCA GAAGTAAGTT GGCCGCAGTG TTATCACTCA 8700
658
659 TGGTTATGGC AGCACTGCAT AATTCTCTTA CTGTCATGCC ATCCGTAAGA TGCTTTCTG 8760
660
661 TGACTGGTGA GTACTCAACC AAGTCATTCT GAGAATAGTG TATGCGCGA CCGAGTTGCT 8820
662
663 CTTGCCCGGC GTCAATACGG GATAATACCG CGCCACATAG CAGAACTTTA AAAGTGCTCA 8880
664
665 TCATTGGAAA ACGTTCTTCG GGGCGAAAAC TCTCAAGGAT CTTACCGCTG TTGAGATCCA 8940
666
667 GTTCGATGTA ACCCACTCGT GCACCCAACT GATCTTCAGC ATCTTTACT TTCACCAGCG 9000
668
669 TTTCTGGGTG AGCAAAAACA GGAAGGCAAA ATGCCGCAA AAAGGGAATA AGGGCGACAC 9060
670
671 GGAAATGTTG AATACTCATA CTCTTCCTTT TTCAATATTA TTGAAGCATT TATCAGGGTT 9120
672
673 ATTGTCTCAT GAGCGGATAC ATATTTGAAT GTATTTAGAA AAATAAACAA ATAGGGTTC 9180
674
675 CGCGCACATT TCCCCGAAAAA GTGCCACCT 9209
676

Patent Application US/07/978,891

677 (4) INFORMATION FOR SEQ. ID. NO.: 3:

678

679 (i) SEQUENCE CHARACTERISTICS:

680

681 (A) LENGTH: 54 bases

682 (B) TYPE: nucleic acid

683 (C) STRANDEDNESS: single

684 (D) TOPOLOGY: linear

685

686 (ii) MOLECULE TYPE: DNA (genomic)

687

688 (iii) HYPOTHETICAL: yes

689

690 (iv) ANTI-SENSE: no

691

692 (ix) SEQUENCE DESCRIPTION: SEQ. ID. NO.: 3:

693

694 5' ATC ACA GAT CTC TCA CCA TGG ATT TTC AGG TBC AGA TTA TCA GCT 52

695 TC 3' 2

696

697 invalid

698 (5) INFORMATION FOR SEQ. ID. NO.: 4:

699

700 (i) SEQUENCE CHARACTERISTICS:

701

702 (A) LENGTH: 30 bases

703 (B) TYPE: nucleic acid

704 (C) STRANDEDNESS: single

705 (D) TOPOLOGY: linear

706

707 (ii) MOLECULE TYPE: DNA (genomic)

708

709 (iii) HYPOTHETICAL: yes

710

711 (iv) ANTI-SENSE: yes — the above anti-sense is "no". Please verify
712 these responses. PTO assumes that

713 (ix) SEQUENCE DESCRIPTION: SEQ. ID. NO.: 4:

714

715

716 5' TGC AGC ATC CGT ACG TTT GAT TTC CAG CTT 3' 30

717

718

719 (6) INFORMATION FOR SEQ. ID. NO.: 5:

720

721 (i) SEQUENCE CHARACTERISTICS:

722

723 (A) LENGTH: 384 bases

724 (B) TYPE: nucleic acid

725 (C) STRANDEDNESS: single

726 (D) TOPOLOGY: linear

727

728 (ii) MOLECULE TYPE: DNA (genomic)

Place a space
before the
number

54

the sequence is
 $5' \rightarrow 3'$

Patent Application US/07/978,891

729
730 (iii)HYPOTHETICAL: yes
731
732 (iv)ANTI-SENSE: no
733
734 (ix)SEQUENCE DESCRIPTION: SEQ. ID. NO.: 5:
735
736

737 ATG GAT TTT CAG GTG CAG ATT ATC AGC TTC CTG CTA ATC AGT GCT TCA GTC 51
738 ATA ATG TCC AGA GGG CAA ATT GTT CTC TCC CAG TCT CCA GCA ATC CTG TCT102
739 GCA TCT CCA GGG GAG AAG GTC ACA ATG ACT TGC AGG GCC AGC TCA AGT GTA153
740 AGT TAC ATC CAC TGG TTC CAG CAG AAG CCA GGA TCC TCC CCC AAA CCC TGG204
741 ATT TAT GCC ACA TCC AAC CTG GCT TCT GGA GTC CCT GTT CGC TTC AGT GGC255
742 AGT GGG TCT GGG ACT TCT TAC TCT CTC ACA ATC AGC AGA GTG GAG GCT GAA306
743 GAT GCT GCC ACT TAT TAC TGC CAG CAG TGG ACT AGT AAC CCA CCC ACG TTC357
744 GGA GGG GGG ACC AAG CTG GAA ATC AAA384

745
746
747
748
749
750
751
752
753
754 (7)INFORMATION FOR SEQ. ID. NO.: 6:
755
756 (i)SEQUENCE CHARACTERISTICS:

757
758 (A)LENGTH: 27 bases
759 (B)TYPE: nucleic acid
760 (C)STRANDEDNESS: single
761 (D)TOPOLOGY: linear
762

763 (ii)MOLECULE TYPE: DNA (genomic)
764

765 (iii)HYPOTHETICAL: yes
766

767 (iv)ANTI-SENSE: no
768

769 (ix)SEQUENCE DESCRIPTION: SEQ. ID. NO.: 6:
770
771

772 5' GCG GCT CCC ACG CGT GTC CTG TCC CAG 3' 27
773

774
775
776
777 (8)INFORMATION FOR SEQ. ID. NO.: 7:
778

779 (i)SEQUENCE CHARACTERISTICS:
780

Patent Application US/07/978,891

781 (A) LENGTH: 29 bases
782 (B) TYPE: nucleic acid
783 (C) STRANDEDNESS: single
784 (D) TOPOLOGY: linear
785
786 (ii) MOLECULE TYPE: DNA (genomic)
787
788 (iii) HYPOTHETICAL: yes
789
790 (iv) ANTI-SENSE: yes
791

792 (ix) SEQUENCE DESCRIPTION: SEQ. ID. NO.: 7:

793 5' GG(G/C) TGT TGT GCT AGC TG(A/C) (A/G)GA GAC (G/A)GT GA N 29

794 All of these locations need to be different to define N.
795
796 use "N" and define the alternatives in the feature table

797 (9) INFORMATION FOR SEQ. ID. NO.: 8:

798 (i) SEQUENCE CHARACTERISTICS:

800 (A) LENGTH: 420 bases
801 (B) TYPE: nucleic acid
802 (C) STRANDEDNESS: single
803 (D) TOPOLOGY: linear
804
805
806 (ii) MOLECULE TYPE: DNA (genomic)
807
808 (iii) HYPOTHETICAL: yes
809
810 (iv) ANTI-SENSE: no
811
812 (ix) SEQUENCE DESCRIPTION: SEQ. ID. NO.: 8:

813
814
815 ATG GGT TGG AGC CTC ATC TTG CTC TTC CTT GTC GCT GTT GCT ACG CGT GTC 51
816
817 CTG TCC CAG GTA CAA CTG CAG CCT GGG GCT GAG CTG GTG AAG CCT GGG 102
818
819 GCC TCA GTG AAG ATG TCC TGC AAG GCT TCT GGC TAC ACA TTT ACC AGT TAC 153
820
821 AAT ATG CAC TGG GTA AAA CAG ACA CCT GGT CGG GGC CTG GAA TGG ATT GGA 204
822
823 GCT ATT TAT CCC GGA AAT GGT GAT ACT TCC TAC AAT CAG AAG TTC AAA GGC 255
824
825 AAG GCC ACA TTG ACT GCA GAC AAA TCC TCC AGC ACA GCC TAC ATG CAG CTC 306
826
827 AGC AGC CTG ACA TCT GAG GAC TCT GCG GTC TAT TAC TGT GCA AGA TCG ACT 357
828
829 TAC TAC GGC GGT GAC TGG TAC TTC AAT GTC TGG GGC GCA GGG ACC ACG GTC 408
830 ACC GTC TCT GCA 420
831